

PATENT ABSTRACTS OF JAPAN

(11)Publication number : 11-088419

(43)Date of publication of application : 30.03.1999

(51)Int.Cl.

H04L 12/54

H04L 12/58

G06F 13/00

G06F 13/00

// G06F 17/30

H04N 7/173

(21)Application number : 09-249218

(71)Applicant : TSUSHIN HOSO KIKO
SONY CORP

(22)Date of filing : 12.09.1997

(72)Inventor : KONDO KOJI
HONDA FUMITAKA

(54) SYSTEM FOR DISTRIBUTING ANIMATION INFORMATION AND ITS
METHOD

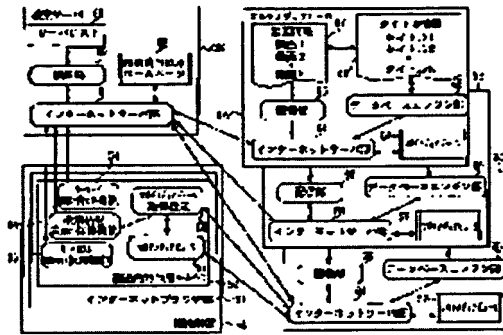
BEST AVAILABLE COPY

(57)Abstract:

PROBLEM TO BE SOLVED: To permit one terminal equipment to easily retrieve animation information stored in plural animation information distributing sources and also to receive a distribution.

SOLUTION: A retrieval server 3S distributes a transmissive access homepage 52 to a terminal equipment 4 in accordance with access from the terminal equipment 4. A user uses the transmissive access homepage 52 so as to request the retrieval of animation information.

The retrieval server 3S retrieves animation information on a network in accordance with the retrieval request from the terminal



equipment 4 and distributes a retrieval result to the terminal equipment 4. The user uses the retrieval result so as to receive the distribution of animation information from a multi-media server. In this case, the terminal equipment 4 down-loads a multi-media viewer 57 required for reproducing animation information from the multi-media server as necessary.

CLAIMS

[Claim(s)]

[Claim 1] Connect with a client through a network and the World Wide Web which is the system made accessible is used for the information on the Internet. An information distribution means for animation information access to distribute the information for animation information access for realizing the retrieval demand function of animation information, and the retrieval result display function of animation information to a client according to access from a client, Connect with a client through a network and a retrieval demand of the animation information from the client using said retrieval demand function is accepted. An animation information retrieval means to distribute to a client the retrieval result which retrieves animation information on a network and includes the link information to animation information, Connect with a client through a network and it responds to access from the client using the link information included in said retrieval result displayed by said retrieval result display function. The animation information distribution system characterized by having the animation information distribution means which distributes animation information.

[Claim 2] Said animation information retrieval means is an animation information distribution system according to claim 1 characterized by searching for the animation information distribution means on a network, and having the function which creates the list of animation information distribution means.

[Claim 3] It is the animation information distribution system according to claim 2 which said animation information retrieval means has further the function which distributes the list of animation information distribution means on a network to a client, and is characterized by for said information for animation information access to include the information for realizing the list display function which displays the list distributed by said animation information retrieval means to a client.

[Claim 4] It is the animation information distribution system according to claim 1 said animation information distribution means has the function which distributes a program required for playback of the animation information to distribute, and carry out that said information for animation information access contains the information for realizing the program acquisition function for playback which acquires the program for playback required for playback of animation information from an animation information distribution means to a client as the description.

[Claim 5] Use for the information on the Internet the World Wide Web which is the system made accessible, and a network is minded. The information distribution

procedure for animation information access which distributes the information for animation information access for realizing the retrieval demand function of animation information, and the retrieval result display function of animation information to a client according to access from a client, A retrieval demand of the animation information from the client using said retrieval demand function is accepted through a network. The animation information retrieval procedure which distributes to a client the retrieval result which retrieves animation information on a network and includes the link information to animation information, The animation information distribution approach characterized by including the animation information distribution procedure which distributes animation information through a network according to access from the client using the link information included in said retrieval result displayed by said retrieval result display function.

[Claim 6] The animation information distribution approach according to claim 5 characterized by searching for the animation information distribution means on a network, and including the list creation procedure which creates the list of animation information distribution origin.

[Claim 7] Said information for animation information access is the animation information distribution approach according to claim 6 characterized by including the information for realizing the list display function which displays the list distributed by said list distribution procedure to a client including the list distribution procedure which distributes the list created by said list creation procedure to a client.

[Claim 8] Said information for animation information access is the animation information distribution approach according to claim 5 characterized by to include the information for realizing the program acquisition function for playback which acquires the program for playback required for playback of animation information to a client including said animation information distribution procedure distributing a program required for playback of the animation information to distribute.

TECHNICAL FIELD

[Field of the Invention] This invention relates to the animation information distribution system and approach for distributing animation information to a client.

PRIOR ART

[Description of the Prior Art] The multimedia information distribution system for distributing multimedia information including animation information to a client in recent years is put in practical use. As an example of such a multimedia information distribution system, there is a video-on-demand (it is hereafter described also as VOD.) system which distributes image data, audio data, etc. from a server according to an acquisition demand of the movie from a client, a program, etc.

[0003] To the multimedia server, the terminal unit of dedication was connected and the conventional multimedia information distribution system was constituted. Drawing 9 shows an example of the conventional multimedia information distribution structure of a system. The terminal units 93A, 93B, and 93C of the dedication which serves as a client through LANs (Local Area Network) 92A, 92B, and 92C of dedication, respectively are connected to the multimedia servers 91A, 91B, and 91C, and the multimedia information distribution system which became independent, respectively consists of examples shown in this drawing.

[0004] In the system shown in drawing 9, as for a user, delivery, on the other hand each multimedia servers 91A, 91B, and 91C send a retrieval result and information for a retrieval demand and a viewing and listening demand of information to each terminal units 93A, 93B, and 93C to each multimedia servers 91A, 91B, and 91C using each terminal units 93A, 93B, and 93C.

[0005] In the example shown in drawing 9, since two or more multimedia information distribution systems exist independently, as x mark in drawing showed, one terminal unit (for example, terminal unit 93B) cannot access the multimedia servers 91A and 91C, or information cannot be exchanged between each multimedia servers 91A and 91B and 91C.

TECHNICAL PROBLEM

[Problem(s) to be Solved by the Invention] By the way, a user has the case where he wants to use the multimedia information accumulated in two or more multimedia servers. Moreover, although multimedia information is very importantly [as information] close to human being's sensibility and amount of information is also large, so, many resources are needed for are recording. Therefore, it is thought that it is not realistic for one site to concentrate, and to accumulate and manage all multimedia information, and it becomes in use to accumulate in two or more sites dispersedly. Therefore, the situation that one user accesses two or more multimedia servers may occur.

[0007] However, since the system which the terminal unit of dedication was connected to each multimedia server, and became independent consisted of conventional multimedia information distribution systems, there were the following troubles.

[0008] First, since operating instructions differed for every terminal, each multimedia server had the trouble that actuation was complicated, respectively, while the terminal unit of dedication was needed, respectively and cost increased to each multimedia server, since specifications differed.

[0009] Moreover, from the difference in the structure of each multimedia server, information needed to be retrieved by each method using each multimedia server, the result needed to be obtained from each terminal unit, respectively, and there was a trouble that actuation was complicated.

[0010] furthermore, the configuration and environment of a multimedia server where a terminal unit exists on a network -- not depending -- it does not obtain, therefore there is no versatility in a user interface, and there was a trouble that actuation will need to be complicated, construction of a user interface will need to be complicated, or it will be necessary to change a user interface according to the configuration of a multimedia server or an environmental change.

[0011] Furthermore, in order to view and listen to the animation of two or more multimedia servers with which classes differ, while installing the program for viewing and listening to the animation of each multimedia server according to the individual in advance and taking time and effort, there was a trouble that it could not respond flexibly to modification of a program in a terminal unit.

[0012] This invention was made in view of this trouble, and the purpose retrieves the animation information easily accumulated in two or more animation information distribution origin by one terminal unit, or is to offer the animation information distribution system and approach which made it possible to receive distribution.

DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] It is the functional block diagram showing the function of the retrieval server in the animation information distribution system concerning the gestalt of 1 operation of this invention, a multimedia server, and a terminal unit.

[Drawing 2] It is the block diagram showing the hardware configuration of the retrieval server in the animation information distribution system concerning the gestalt of 1 operation of this invention, a multimedia server, and a terminal unit.

[Drawing 3] It is the explanatory view showing the configuration of the outline of the animation information distribution system concerning the gestalt of 1 operation of this invention.

[Drawing 4] It is an explanatory view for explaining the configuration of the screen of the homepage for transparent access in the gestalt of 1 operation of this invention.

[Drawing 5] It is an explanatory view for explaining screen transition of the homepage for transparent access at the time of actuation of the animation information distribution system concerning the gestalt of 1 operation of this invention.

[Drawing 6] It is an explanatory view for explaining the sequence of the processing in the animation information distribution system concerning the gestalt of 1 operation of this invention.

[Drawing 7] It is an explanatory view for explaining the flow of the processing in the animation information distribution system concerning the gestalt of 1 operation of this invention.

[Drawing 8] It is an explanatory view for explaining the flow of the processing in the animation information distribution system concerning the gestalt of 1 operation of this invention.

[Drawing 9] It is the explanatory view showing an example of the conventional multimedia information distribution structure of a system.

[Description of Notations]

1 [-- A multimedia server, 4 / -- A terminal unit, 51 / -- The Internet browser section, 57 / -- The homepage for transparent access, 61 / -- The internet server section, 62 / -- The retrieval section, 64 / -- The internet server section, 65 / -- The distribution section, 66 / -- Database engine section] -- A multimedia information distribution system, 2 -- A network, 3S -- A retrieval server, 3A, 3B, 3C

MEANS

[Means for Solving the Problem] The animation information distribution system of this invention is connected to a client through a network, and the World Wide Web which is the system made accessible is used for the information on the Internet. An information distribution means for animation information access to distribute the information for animation information access for realizing the retrieval demand function of animation information, and the retrieval result display function of animation information to a client according to access from a client, Connect with a client through a network and a retrieval demand of the animation information from the client using a retrieval demand

function is accepted. An animation information retrieval means to distribute to a client the retrieval result which retrieves animation information on a network and includes the link information to animation information, It connects with a client through a network and has the animation information distribution means which distributes animation information according to access from the client using the link information included in the retrieval result displayed by the retrieval result display function.

[0014] The animation information distribution approach of this invention uses for the information on the Internet the World Wide Web which is the system made accessible, and minds a network. The information distribution procedure for animation information access which distributes the information for animation information access for realizing the retrieval demand function of animation information, and the retrieval result display function of animation information to a client according to access from a client, A retrieval demand of the animation information from the client using a retrieval demand function is accepted through a network. The animation information retrieval procedure which distributes to a client the retrieval result which retrieves animation information on a network and includes the link information to animation information, According to access from the client using the link information included in the retrieval result displayed by the retrieval result display function, the animation information distribution procedure which distributes animation information is included through a network.

[0015] In the animation information distribution system of this invention, the information for animation information access for realizing the retrieval demand function of animation information and the retrieval result display function of animation information to a client with the information distribution means for animation information access according to access from a client using World Wide Web is distributed. Moreover, retrieval of the animation information on a network is performed by the animation information retrieval means according to a retrieval demand of the animation information from the client using a retrieval demand function, and a retrieval result including the link information to animation information is distributed to a client. Moreover, distribution of animation information is performed by the animation information distribution means according to access from the client using the link information included in the retrieval result displayed by the retrieval result display function.

[0016] By the animation information distribution approach of this invention, by the information distribution procedure for animation information access, World Wide Web is used and the information for animation information access for realizing the retrieval

demand function of animation information and the retrieval result display function of animation information to a client is distributed through a network according to access from a client. Moreover, according to a retrieval demand of the animation information from the client which used the retrieval demand function through the network with the animation information retrieval procedure, retrieval of the animation information on a network is performed and a retrieval result including the link information to animation information is distributed to a client. Moreover, according to access from the client using the link information included in the retrieval result displayed by the retrieval result display function, distribution of animation information is performed by the animation information distribution procedure through a network.

[0017]

[Embodiment of the Invention] Hereafter, the gestalt of operation of this invention is explained to a detail with reference to a drawing.

[0018] Drawing 3 is the explanatory view showing the configuration of the outline of the multimedia information distribution system as an animation information distribution system concerning the gestalt of 1 operation of this invention. This multimedia information distribution system is a system which offers the multimedia information on the request which includes animation information in the information on the Internet according to the demand from a client using the World Wide Web (it is described as WWW below World-Wide-Web;) which is the system made accessible. In addition, below, animation information explains on behalf of multimedia information.

[0019] The multimedia information distribution system 1 is connected to a network 2. Retrieval server 3S which distribute to a client the retrieval result which retrieves animation information on a network 2 and includes the link information to animation information according to a retrieval demand of the animation information from a client, Two or more multimedia servers 3A-3C from which it connects with a network 2, and the class which distributes the animation information on desired according to a demand differs, respectively while accumulating the animation information with which a client is provided, While connecting with a network 2 and displaying delivery and its retrieval result for a retrieval demand of animation information to retrieval server 3S, it has the terminal unit 4 as a client for reproducing animation information.

[0020] In addition, there is especially no limit in the number of the terminal unit 4 connected to a network 2, retrieval server 3S, and the multimedia servers 3A-3C, and the topology to the physical network 2.

[0021] Retrieval server 3S correspond to the information distribution means for animation information access and animation information retrieval means in this

invention, and the multimedia servers 3A-3C correspond to the animation information distribution means in this invention.

[0022] Drawing 2 is the block diagram showing the hardware configuration of retrieval server 3S in drawing 3, the multimedia servers 3A-3C, and a terminal unit 4. In addition, in this drawing, retrieval server 3S and the multimedia servers 3A-3C are expressed as a server 3.

[0023] The server 3 is equipped with the display 12 connected to the body 11 of a computer, and this body 11 of a computer, a keyboard 13, a mouse 14, and hard disk drive units 15a and 15b. The memory 22 in which the body 11 of a computer contains CPU (central processing unit) 21, and ROM (read only memory) and RAM (random access memory), I/O which is connected to a display controller 23, and the keyboard 13 and mouse 14 for control of a display 12, and controls I/O (it is hereafter described also as I/O.) It has a controller 24, the hard disk controller 25 for controlling hard disk drive units 15a and 15b, and the network controller 26 that is connected to a network 2 and controls a communication link, and these are mutually connected by the bus 27. CPU 21 performs the application program memorized by hard disk drive units 15a and 15b by making RAM in memory 22 into a working area.

[0024] The terminal unit 4 is equipped with the display 32 connected to the body 31 of a computer, and this body 31 of a computer, a keyboard 33, a mouse 34, Loudspeakers 35a and 35b, and a hard disk drive unit 36. The memory 42 in which the body 31 of a computer contains CPU 41, and ROM and RAM, The MPEG processing section 44 which performs compression of the display controller 43 for control of a display 32, and the image data based on MPEG (Moving Picture Experts Group) specification, and expanding processing, I/O controller 45 which is connected to a keyboard 33 and a mouse 34, and controls I/O, The sound controller 46 which controls the voice output from Loudspeakers 35a and 35b, It has the hard disk controller 47 for controlling a hard disk drive unit 36, and the network controller 48 which is connected to a network 2 and controls a communication link, and these are mutually connected by the bus 49. In addition, you may realize by hardware and software may realize the MPEG processing section 44. CPU 41 performs the application program memorized by the hard disk drive unit 36 by making RAM in memory 42 into a working area. In addition, a commercial internet browser operates, playback of the image data based on MPEG specification is possible for a terminal unit 4, and if it is a platform where a Java script operates, it will not have especially limitation of hardware.

[0025] Drawing 1 is the functional block diagram showing the function of retrieval server 3S in drawing 3, the multimedia servers 3A-3C, and a terminal unit 4.

[0026] A terminal unit 4 is a terminal for performing retrieval directions of animation information, display of a retrieval result, and playback of animation information. This terminal unit 4 accessed the Internet using WWW, and is equipped with the Internet browser section 51 for receiving and displaying information. This Internet browser section 51 is general commercial browser software (for example, Netscape Navigator (Netscape Navigator (U.S. Netscape Communications trademark of a shrine)) is realized.). At the time of starting, by the Internet browser section 51, a terminal unit 4 acquires the homepage 52 for transparent access as information for animation information access, and can display it now from retrieval server 3S.

[0027] The homepage 52 for transparent access is a user interface screen for performing the exchange with retrieval server 3S, and realizes transparent access which can access animation information, without a user being conscious of an address, a class, etc. of multimedia servers 3A-3C. The homepage 52 for transparent access consists of HTML (HyperText Markup Language) documents including the program described with Java programming language.

[0028] The homepage 52 for transparent access has server list display / maintenance function 53, the keyword inquiry function 54, retrieval result display / maintenance function 55, and the multimedia viewer acquisition function 56. Server list display / maintenance function 53 is a function created by retrieval server 3S to display and hold the list of multimedia servers with an accessible terminal unit 4 (list).

[0029] The keyword inquiry function 54 is a function to transmit the keyword for making animation information retrieve to retrieval server 3S. The keyword inquiry function 54 transmits the keyword which a user inputs in order to retrieve animation information to retrieval server 3S as a retrieval demand. Retrieval result display / maintenance function 55 is a function to display and hold the retrieval result of the animation information by retrieval server 3S.

[0030] The multimedia viewer acquisition function 56 is a function which acquires the multimedia viewer 57 which is a program required in order to reproduce the animation information distributed from a multimedia server from a multimedia server. In addition, the acquired multimedia viewer 57 is stored in a hard disk drive unit 36. In addition, the multimedia viewer acquisition function 56 is acquired from the multimedia server, only when a terminal unit 4 accesses a multimedia server and the multimedia viewer required in order to reproduce the animation information distributed from the multimedia server is not acquired before.

[0031] Each above-mentioned functions 53-56 in the homepage 52 for transparent access are realized when a terminal unit 4 performs the program described with the

Java programming language included in an HTML document.

[0032] Server list display / maintenance function 53 is equivalent to the list display function in this invention, and equivalent to the keyword inquiry function 54 and the retrieval demand function in this invention, retrieval result display / maintenance function 55 is equivalent to the retrieval result display function in this invention, and the multimedia viewer acquisition function 56 corresponds [function] to the program acquisition function for playback in this invention in it.

[0033] Retrieval server 3S are a server which has the function to create the server list made applicable to retrieval, to perform a search to the retrieval demand from a terminal unit 4, and to return a retrieval result to a terminal unit 4. Moreover, retrieval server 3S hold the homepage 52 for transparent access, and have the function downloaded to a terminal unit 4 according to the demand at the time of starting of a terminal unit 4.

[0034] The internet server section 61 in which retrieval server 3S perform the exchange with a terminal unit 4 and the multimedia servers 3A-3C using WWW, This internet server section 61 is minded. A retrieval demand from a terminal unit 4 Reception, Based on this retrieval demand, retrieval of animation information was directed to the multimedia servers 3A-3C, the retrieval result from the multimedia servers 3A-3C was adjusted, and it has the retrieval section 62 distributed to a terminal unit 4. The internet server section 61 is realized by the software for performing informational management, distribution, etc. which are exhibited on the Internet using WWW. The retrieval section 62 will be realized by the software called the retrieval agent who performs retrieval processing autonomously and returns a retrieval result if the demand from a user is received.

[0035] The retrieval section 62 creates the server list 63 which is a list of the multimedia server made applicable to retrieval, i.e., multimedia servers with an accessible terminal unit 4, and also has the function distributed to a terminal unit 4 through the internet server section 61. The server list 63 is stored in hard disk drive units 15a and 15b. The retrieval section 62 adds the identifier to the server list 63, when a terminal unit 4 accesses retrieval server 3S, other multimedia servers which exist on a network 2 are looked for based on the server list 63 including the identifier of current and the multimedia server currently recognized and a new multimedia server is discovered. Grasp of the newest accessible multimedia server is thereby always attained.

[0036] Moreover, retrieval server 3S hold the homepage 52 for transparent access, and download the homepage 52 for transparent access to a terminal unit 4 through the internet server section 61 according to the demand at the time of starting of a terminal

unit 4.

[0037] The multimedia servers 3A-3C are servers which have the function which retrieves the title information corresponding to animation information, downloads the multimedia viewer 57 to a terminal unit 4 if needed according to the function to return a retrieval result to retrieval server 3S, and the playback demand from a terminal unit 4, according to the demand of retrieval server 3S, and distributes animation information to a terminal unit 4.

[0038] The multimedia servers 3A-3C are equipped with the internet server section 64 which performs the exchange with retrieval server 3S and a terminal unit 4, the distribution section 65 which cooperates with the multimedia viewer 57 through this internet server section 64, and distributes animation information to a terminal unit 4, and the database engine section 66 which retrieves title information according to the retrieval demand from retrieval server 3S, and returns a retrieval result to retrieval server 3S, respectively. The internet server section 64, the distribution section 65, and the database engine section 66 are realized by software, respectively.

[0039] Moreover, the multimedia servers 3A-3C hold the multimedia viewer 57 required to reproduce the animation information 67 distributed to a terminal unit 4, the title information 68 corresponding to this animation information 67, and the animation information 67, respectively. The animation information 67 includes the information on the title corresponding to each contents in the title information 68 (it is described as titles 1 and 2 and --N by a diagram.) including the data of two or more contents (it is described as animations 1 and 2 and --N by a diagram.). The animation information 67, the title information 68, and the multimedia viewer 57 are stored in hard disk drive units 15a and 15b.

[0040] The database engine section 66 is realized by the database management system (DBMS; Database Management System) (Sybase (trademark of U.S. Sybase Inc)), for example, Sybase. The database engine section 66 retrieves the title information 68 using SQL (Structured Query Language; structured query language) according to the retrieval demand from the retrieval section 62 of retrieval server 3S. The title of the animation information applicable to retrieval conditions, the identifier of the multimedia server in which the animation information exists, The internet server section 64 is minded for the retrieval result containing URL (Uniform Resource Locator) which shows the file name of the animation information, and the access approach to the storage place and its storage place of the animation information. The retrieval section 62 of retrieval server 3S is answered.

[0041] The internet server section 64 distributes the multimedia viewer 57 to a terminal

unit 4 according to the multimedia viewer acquisition demand using the multimedia viewer acquisition function 56 of the homepage 52 for transparent access from a terminal unit 4.

[0042] The multimedia viewer 57 is a program for animation playback corresponding to the contents type (for example, compression method of an animation) of the animation information 67, and has become the plug-in software of the Internet browser. When the accessed terminal unit 4 does not hold the multimedia viewer 57, a terminal unit 4 becomes reproducible [an animation] by downloading the multimedia viewer 57 to a terminal unit 4, without being dependent on the class of multimedia server.

[0043] Here, with reference to drawing 4 , the screen configuration of the homepage 52 for transparent access is explained. The homepage 52 for transparent access is distributed to the center section of the screen from a multimedia server, has the animation information playback section 71 for displaying the animation information reproduced by the multimedia viewer 57, and has the animation information control carbon button 72 for controlling playback and a halt of animation information to this animation information playback section 71 down side. Moreover, the homepage 52 for transparent access It has the keyword input section 73 for inputting a keyword into the animation information playback section 71 bottom by the keyword inquiry function 54. On the right-hand side of the animation information playback section 71 by server list display / maintenance function 53 It has the server list display 74 for a terminal unit 4 to display the list of the identifiers of an accessible multimedia server, and has the retrieval result display 75 for displaying the retrieval result displayed on the left-hand side of the animation information playback section 71 by retrieval result display / maintenance function 55.

[0044] The identifier and icon of a multimedia server with an accessible terminal unit 4 are displayed on the server list display 74. At both the identifier and icon of a multimedia server, URL as a link information for accessing to the multimedia server is embedded. The title where URL of the animation information which was retrieved based on the keyword which the user inputted by the keyword input section 73, and was acquired was embedded is displayed on the retrieval result display 75.

[0045] Next, with reference to drawing 5 thru/or drawing 8 , actuation of the multimedia information distribution system 1 as an animation information distribution system concerning the gestalt of this operation is explained. The explanatory view, drawing 7 , and drawing 8 which show the sequence of processing [in / in the explanatory view in which drawing 5 shows transition of the screen display of the homepage for transparent access, and drawing 6 / a terminal unit 4 retrieval server 3S,

and the multimedia servers 3A-3C] are the explanatory view showing serially the processing in a terminal unit 4, retrieval server 3S, and the multimedia servers 3A-3C. In addition, the following explanation serves as explanation of the animation information distribution approach concerning the gestalt of this operation.

[0046] In the multimedia information distribution system 1, first, a terminal unit 4 starts browser software (step S1), by the Internet browser section 51, specifies accessible retrieval server 3S, and connects them to retrieval server 3S (step S2). Retrieval server 3S distribute the homepage 52 for transparent access to a terminal unit 4 through the internet server section 61 (step S3). Next, a terminal unit 4 acquires the homepage 52 for transparent access distributed from retrieval server 3S, and as shown in drawing 5 (a), it displays it by the Internet browser section 51 (step S4).

[0047] On the other hand, retrieval server 3S search for the multimedia server which exists on a network 2 by the retrieval section 62 (step S5). The multimedia server which exists on a network 2 answers the retrieval section 62 of retrieval server 3S by using self identifier and icon of a multimedia server as retrieval result data (step S6).

Although the retrieval section 62 of retrieval server 3S adds the identifier and icon to the server list 63 and is in the server list 63 when a new multimedia server is discovered, the identifier and icon of a multimedia server which turned out for access to be impossible are deleted from the server list 63, update the server list 63, and transmit it to a terminal unit 4 (step S7). As a terminal unit 4 acquires the server list 63 (step S7), for example, showed it to drawing 5 (b) by server list display / maintenance function 53 of the homepage 52 for transparent access, the list of multimedia servers (Server Name and icon) is displayed on the server list display 74 (step S8). In drawing 5 (b), the server A currently displayed on the server list display 74, Server B, and Server C support the multimedia servers 3A, 3B, and 3C, respectively. In addition, URL of a server is embedded by both the Server Name and icons that are displayed at the server list display 74, and when a user chooses this Server Name and icon, a terminal unit 4 is accessed at the server of URL embedded at selected Server Name or an icon.

[0048] Next, in the homepage 52 for transparent access, a user inputs into the keyword input section 73 the keyword about the title of animation information which wants to search, as shown in drawing 5 (b). According to this, the keyword inquiry function 54 of the homepage 52 for transparent access is transmitted to retrieval server 3S by considering the inputted keyword as a retrieval demand (step S9). The retrieval section 62 of retrieval server 3S transmits a retrieval demand to each multimedia servers 3A, 3B, and 3C which exist in a server list, and directs retrieval of animation information (step S10). According to this retrieval demand, each multimedia servers 3A, 3B, and 3C

retrieve the title information 68 by the database engine section 66, and answer the retrieval section 62 of retrieval server 3S, respectively in a retrieval result including the title of the animation information applicable to a retrieval demand, the identifier of the multimedia server in which that animation information exists, and the file name of animation information (step S11). The retrieval section 62 adjusts the retrieval result from each multimedia servers 3A, 3B, and 3C, and transmits to a terminal unit 4 as a criminal investigation result list (step S12). A terminal unit 4 acquires this retrieval result list, and by retrieval result display / maintenance function 55 of the homepage 52 for transparent access, as shown in drawing 5 (c), it displays the list of titles of the animation information which it is as a result of retrieval on the retrieval result display 75 of the homepage 52 for transparent access (step S13).

[0049] Next, a user chooses the title 76 of the animation information on desired from the lists of titles of the animation information currently displayed on the retrieval result display 75 (step S14). Directly, it connects with the multimedia server (at the example shown in drawing 6 , it is multimedia server 3C) in which the selected animation information is accumulated based on URL currently embedded in the title of the selected animation information (step S15), and a terminal unit 4 transmits the file name of the selected animation information to it. The connected multimedia server transmits the type (for example, compression method of an animation) of animation information to a terminal unit 4 based on the file name of this animation information (step S16).

[0050] It checks whether the multimedia viewer corresponding to the type of the animation information which acquired the type of this animation information and was acquired by the multimedia viewer acquisition function 56 of the homepage 52 for transparent access has already downloaded the terminal unit 4 (step S17). When having not downloaded, by the multimedia viewer acquisition function 56, from the multimedia server which requires animation information, a terminal unit 4 transmits the multimedia viewer name corresponding to a type to the animation information, and requires download of a multimedia viewer (step S18). The multimedia server which received this demand transmits the multimedia viewer 57 to a terminal unit 4 (step S19). A terminal unit 4 downloads this multimedia viewer 57 by the multimedia viewer acquisition function 56. In addition, in a terminal unit 4, when the corresponding multimedia viewer has already downloaded, the multimedia viewer is reused and steps S17-S19 are not performed.

[0051] Next, a multimedia server distributes the animation information corresponding to the file name of the animation information transmitted from the terminal unit 4 (step

S20). A terminal unit 4 reproduces the distributed animation information using the multimedia viewer 57 (step S20). As shown in drawing 5 (d), animation information is displayed on the dynamic-image playback section 71 of the homepage 52 for transparent access, and a user views and listens to this. Then, termination of distribution of the animation information from a multimedia server also ends playback of the animation information in a terminal unit 4 (step S21).

[0052] According to the animation information distribution system and the animation information distribution approach of starting the gestalt of this operation, as explained above According to access to retrieval server 3S from a terminal unit 4, a terminal unit 4 is received from retrieval server 3S. While the homepage 52 for transparent access is distributed and a user enables it to perform a retrieval demand of animation information using this homepage 52 for transparent access According to this retrieval demand, retrieval server 3S retrieve animation information on a network, distribute a retrieval result to a terminal unit 4, and a user uses this retrieval result. Since it enabled it to receive distribution of animation information from a multimedia server, the retrieval and viewing and listening of animation information of a user are attained transparent, without being conscious of a whereabouts location, a class, etc. of multimedia server. [0053] Moreover, actuation becomes easy, while the terminal unit which was required only for the number of the classes of multimedia server will require only one common terminal unit 4 and can reduce cost conventionally.

[0054] Moreover, from a terminal unit 4, it is not necessary to retrieve animation information according to an individual, it becomes possible to two or more multimedia servers to retrieve animation information which made applicable to retrieval once all the multimedia servers that can be accessed by retrieval, and actuation becomes easy.

[0055] Moreover, since the actuation in a terminal unit 4 becomes a thing using general browser software, it excels in versatility. Moreover, construction of the user interface in a terminal unit 4 becomes easy.

[0056] Moreover, since the terminal unit 4 created the list of accessible multimedia servers when retrieval server 3S were accessed from a terminal unit 4, grasp of the newest accessible multimedia server is attained, and while not resetting a terminal unit 4 and not taking time and effort to modification of the change in the multimedia server distributed etc. further, overlooking modification of a multimedia server is lost and it excels in expandability.

[0057] Moreover, in a terminal unit 4, while not installing the program (multimedia viewer) for viewing and listening to the animation information accumulated in two or more multimedia servers in advance and not taking time and effort, it can respond

flexibly to modification of a program.

[0058] Moreover, a terminal unit 4 will become possible [receiving distribution of the animation information from all accessible multimedia servers], if at least one set of accessible retrieval server 3S is known.

[0059] In addition, although it explained that this invention was not limited to the gestalt of the above-mentioned implementation, for example, respectively separate hardware realized one retrieval server 3S and two or more multimedia servers 3A-3C with the gestalt of operation, the same hardware may realize one retrieval server and 1 multimedia server, it may unify, and the multimedia server containing a retrieval server may be prepared. In this case, the internet server section of a retrieval server and a multimedia server becomes common.

[0060] Moreover, in the multimedia server containing a retrieval server, when the retrieval demand (step S5) of a multimedia server is received from other retrieval servers, it searches also from the multimedia server further, and it also becomes possible to answer a letter in a retrieval result to the retrieval server which emitted the retrieval demand. therefore, when two or more multimedia servers containing a retrieval server exist The retrieval server accessed first emits a retrieval demand to the multimedia server which the retrieval server already knows. The multimedia server which received the retrieval demand emits a sequential retrieval demand to the multimedia server which self knows further. Creation of a perfect server list is attained by making a retrieval result the multimedia server which received the retrieval demand answer a letter to the server which emitted the retrieval demand, respectively.

[0061] In addition, when the retrieval server which a terminal unit 4 accesses first when two or more retrieval servers exist is decided, the retrieval server accessed first needs to hold the homepage for transparent access.

EFFECT OF THE INVENTION

[Effect of the Invention] As explained above, according to claim 1 thru/or an animation information distribution system given in four or claim 5 thru/or the animation information distribution approach given in eight Use World Wide Web and it responds to access from a client through a network. Distribute the information for animation information access to a client, and a retrieval demand of the animation information from a client is accepted. Retrieve animation information on a network and a retrieval result including the link information to animation information is distributed to a client. Moreover, since it was made to distribute animation information according to access

from the client using the link information included in a retrieval result The effectiveness of retrieving easily the animation information accumulated in two or more animation information distribution origin with one terminal unit, or becoming possible to receive distribution is done so.

[0063] Moreover, since according to the animation information distribution system according to claim 2 or 3 or the animation information distribution approach according to claim 6 or 7 it searches for the animation information distribution origin on a network and the list of animation information distribution origin was created, the effectiveness that grasp of the accessible newest animation information distribution origin is still attained is done so.

[0064] Moreover, according to an animation information distribution system according to claim 4 or the animation information distribution approach according to claim 8, since it enabled it to distribute a program required for playback of animation information to a terminal unit if needed, with a terminal unit, the effectiveness of it becoming unnecessary to hold a program required for playback of animation information in advance is done so.

DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to the animation information distribution system and approach for distributing animation information to a client.

[0002]

[Description of the Prior Art] The multimedia information distribution system for distributing multimedia information including animation information to a client in recent years is put in practical use. As an example of such a multimedia information distribution system, there is a video-on-demand (it is hereafter described also as VOD.) system which distributes image data, audio data, etc. from a server according to an acquisition demand of the movie from a client, a program, etc.

[0003] To the multimedia server, the terminal unit of dedication was connected and the conventional multimedia information distribution system was constituted. Drawing 9 shows an example of the conventional multimedia information distribution structure of a system. The terminal units 93A, 93B, and 93C of the dedication which serves as a client through LANs (Local Area Network) 92A, 92B, and 92C of dedication, respectively are connected to the multimedia servers 91A, 91B, and 91C, and the

multimedia information distribution system which became independent, respectively consists of examples shown in this drawing.

[0004] In the system shown in drawing 9 , as for a user, delivery, on the other hand each multimedia servers 91A, 91B, and 91C send a retrieval result and information for a retrieval demand and a viewing-and-listening demand of information to each terminal units 93A, 93B, and 93C to each multimedia servers 91A, 91B, and 91C using each terminal units 93A, 93B, and 93C.

[0005] In the example shown in drawing 9 , since two or more multimedia information distribution systems exist independently, as x mark in drawing showed, one terminal unit (for example, terminal unit 93B) cannot access the multimedia servers 91A and 91C, or information cannot be exchanged between each multimedia servers 91A and 91B and 91C.

[0006]

[Problem(s) to be Solved by the Invention] By the way, a user has the case where he wants to use the multimedia information accumulated in two or more multimedia servers. Moreover, although multimedia information is very importantly [as information] close to human being's sensibility and amount of information is also large, so, many resources are needed for are recording. Therefore, it is thought that it is not realistic for one site to concentrate, and to accumulate and manage all multimedia information, and it becomes in use to accumulate in two or more sites dispersedly. Therefore, the situation that one user accesses two or more multimedia servers may occur.

[0007] However, since the system which the terminal unit of dedication was connected to each multimedia server, and became independent consisted of conventional multimedia information distribution systems, there were the following troubles.

[0008] First, since operating instructions differed for every terminal, each multimedia server had the trouble that actuation was complicated, respectively, while the terminal unit of dedication was needed, respectively and cost increased to each multimedia server, since specifications differed.

[0009] Moreover, from the difference in the structure of each multimedia server, information needed to be retrieved by each method using each multimedia server, the result needed to be obtained from each terminal unit, respectively, and there was a trouble that actuation was complicated.

[0010] furthermore, the configuration and environment of a multimedia server where a terminal unit exists on a network -- not depending -- it does not obtain, therefore there is no versatility in a user interface, and there was a trouble that actuation will need to

be complicated, construction of a user interface will need to be complicated, or it will be necessary to change a user interface according to the configuration of a multimedia server or an environmental change.

[0011] Furthermore, in order to view and listen to the animation of two or more multimedia servers with which classes differ, while installing the program for viewing and listening to the animation of each multimedia server according to the individual in advance and taking time and effort, there was a trouble that it could not respond flexibly to modification of a program in a terminal unit.

[0012] This invention was made in view of this trouble, and the purpose retrieves the animation information easily accumulated in two or more animation information distribution origin by one terminal unit, or is to offer the animation information distribution system and approach which made it possible to receive distribution.

[0013]

[Means for Solving the Problem] The animation information distribution system of this invention is connected to a client through a network, and the World Wide Web which is the system made accessible is used for the information on the Internet. An information distribution means for animation information access to distribute the information for animation information access for realizing the retrieval demand function of animation information, and the retrieval result display function of animation information to a client according to access from a client, Connect with a client through a network and a retrieval demand of the animation information from the client using a retrieval demand function is accepted. An animation information retrieval means to distribute to a client the retrieval result which retrieves animation information on a network and includes the link information to animation information, It connects with a client through a network and has the animation information distribution means which distributes animation information according to access from the client using the link information included in the retrieval result displayed by the retrieval result display function.

[0014] The animation information distribution approach of this invention uses for the information on the Internet the World Wide Web which is the system made accessible, and minds a network. The information distribution procedure for animation information access which distributes the information for animation information access for realizing the retrieval demand function of animation information, and the retrieval result display function of animation information to a client according to access from a client, A retrieval demand of the animation information from the client using a retrieval demand function is accepted through a network. The animation information retrieval procedure which distributes to a client the retrieval result which retrieves animation

information on a network and includes the link information to animation information, According to access from the client using the link information included in the retrieval result displayed by the retrieval result display function, the animation information distribution procedure which distributes animation information is included through a network.

[0015] In the animation information distribution system of this invention, the information for animation information access for realizing the retrieval demand function of animation information and the retrieval result display function of animation information to a client with the information distribution means for animation information access according to access from a client using World Wide Web is distributed. Moreover, retrieval of the animation information on a network is performed by the animation information retrieval means according to a retrieval demand of the animation information from the client using a retrieval demand function, and a retrieval result including the link information to animation information is distributed to a client. Moreover, distribution of animation information is performed by the animation information distribution means according to access from the client using the link information included in the retrieval result displayed by the retrieval result display function.

[0016] By the animation information distribution approach of this invention, by the information distribution procedure for animation information access, World Wide Web is used and the information for animation information access for realizing the retrieval demand function of animation information and the retrieval result display function of animation information to a client is distributed through a network according to access from a client. Moreover, according to a retrieval demand of the animation information from the client which used the retrieval demand function through the network with the animation information retrieval procedure, retrieval of the animation information on a network is performed and a retrieval result including the link information to animation information is distributed to a client. Moreover, according to access from the client using the link information included in the retrieval result displayed by the retrieval result display function, distribution of animation information is performed by the animation information distribution procedure through a network.

[0017]

[Embodiment of the Invention] Hereafter, the gestalt of operation of this invention is explained to a detail with reference to a drawing.

[0018] Drawing 3 is the explanatory view showing the configuration of the outline of the multimedia information distribution system as an animation information distribution

system concerning the gestalt of 1 operation of this invention. This multimedia information distribution system is a system which offers the multimedia information on the request which includes animation information in the information on the Internet according to the demand from a client using the World Wide Web (it is described as WWW below World-Wide-Web;) which is the system made accessible. In addition, below, animation information explains on behalf of multimedia information.

[0019] The multimedia information distribution system 1 is connected to a network 2. Retrieval server 3S which distribute to a client the retrieval result which retrieves animation information on a network 2 and includes the link information to animation information according to a retrieval demand of the animation information from a client, Two or more multimedia servers 3A-3C from which it connects with a network 2, and the class which distributes the animation information on desired according to a demand differs, respectively while accumulating the animation information with which a client is provided, While connecting with a network 2 and displaying delivery and its retrieval result for a retrieval demand of animation information to retrieval server 3S, it has the terminal unit 4 as a client for reproducing animation information.

[0020] In addition, there is especially no limit in the number of the terminal unit 4 connected to a network 2, retrieval server 3S, and the multimedia servers 3A-3C, and the topology to the physical network 2.

[0021] Retrieval server 3S correspond to the information distribution means for animation information access and animation information retrieval means in this invention, and the multimedia servers 3A-3C correspond to the animation information distribution means in this invention.

[0022] Drawing 2 is the block diagram showing the hardware configuration of retrieval server 3S in drawing 3 , the multimedia servers 3A-3C, and a terminal unit 4. In addition, in this drawing, retrieval server 3S and the multimedia servers 3A-3C are expressed as a server 3.

[0023] The server 3 is equipped with the display 12 connected to the body 11 of a computer, and this body 11 of a computer, a keyboard 13, a mouse 14, and hard disk drive units 15a and 15b. The memory 22 in which the body 11 of a computer contains CPU (central processing unit)21, and ROM (read only memory) and RAM (random access memory), I/O which is connected to a display controller 23, and the keyboard 13 and mouse 14 for control of a display 12, and controls I/O (it is hereafter described also as I/O.) It has a controller 24, the hard disk controller 25 for controlling hard disk drive units 15a and 15b, and the network controller 26 that is connected to a network 2 and controls a communication link, and these are mutually connected by the bus 27. CPU21

performs the application program memorized by hard disk drive units 15a and 15b by making RAM in memory 22 into a working area.

[0024] The terminal unit 4 is equipped with the display 32 connected to the body 31 of a computer, and this body 31 of a computer, a keyboard 33, a mouse 34, Loudspeakers 35a and 35b, and a hard disk drive unit 36. The memory 42 in which the body 31 of a computer contains CPU41, and ROM and RAM, The MPEG processing section 44 which performs compression of the display controller 43 for control of a display 32, and the image data based on MPEG (Moving Picture Experts Group) specification, and expanding processing, I/O controller 45 which is connected to a keyboard 33 and a mouse 34, and controls I/O, The sound controller 46 which controls the voice output from Loudspeakers 35a and 35b, It has the hard disk controller 47 for controlling a hard disk drive unit 36, and the network controller 48 which is connected to a network 2 and controls a communication link, and these are mutually connected by the bus 49. In addition, you may realize by hardware and software may realize the MPEG processing section 44. CPU41 performs the application program memorized by the hard disk drive unit 36 by making RAM in memory 42 into a working area. In addition, a commercial internet browser operates, playback of the image data based on MPEG specification is possible for a terminal unit 4, and if it is a platform where a Java script operates, it will not have especially limitation of hardware.

[0025] Drawing 1 is the functional block diagram showing the function of retrieval server 3S in drawing 3, the multimedia servers 3A-3C, and a terminal unit 4.

[0026] A terminal unit 4 is a terminal for performing retrieval directions of animation information, display of a retrieval result, and playback of animation information. This terminal unit 4 accessed the Internet using WWW, and is equipped with the Internet browser section 51 for receiving and displaying information. This Internet browser section 51 is general commercial browser software (for example, Netscape Navigator (Netscape Navigator (U.S. Netscape Communications trademark of a shrine)) is realized.). At the time of starting, by the Internet browser section 51, a terminal unit 4 acquires the homepage 52 for transparent access as information for animation information access, and can display it now from retrieval server 3S.

[0027] The homepage 52 for transparent access is a user interface screen for performing the exchange with retrieval server 3S, and realizes transparent access which can access animation information, without a user being conscious of an address, a class, etc. of multimedia servers 3A-3C. The homepage 52 for transparent access consists of HTML (HyperText Markup Language) documents including the program described with Java programming language.

[0028] The homepage 52 for transparent access has server list display / maintenance function 53, the keyword inquiry function 54, retrieval result display / maintenance function 55, and the multimedia viewer acquisition function 56. Server list display / maintenance function 53 is a function created by retrieval server 3S to display and hold the list of multimedia servers with an accessible terminal unit 4 (list).

[0029] The keyword inquiry function 54 is a function to transmit the keyword for making animation information retrieve to retrieval server 3S. The keyword inquiry function 54 transmits the keyword which a user inputs in order to retrieve animation information to retrieval server 3S as a retrieval demand. Retrieval result display / maintenance function 55 is a function to display and hold the retrieval result of the animation information by retrieval server 3S.

[0030] The multimedia viewer acquisition function 56 is a function which acquires the multimedia viewer 57 which is a program required in order to reproduce the animation information distributed from a multimedia server from a multimedia server. In addition, the acquired multimedia viewer 57 is stored in a hard disk drive unit 36. In addition, the multimedia viewer acquisition function 56 is acquired from the multimedia server, only when a terminal unit 4 accesses a multimedia server and the multimedia viewer required in order to reproduce the animation information distributed from the multimedia server is not acquired before.

[0031] Each above-mentioned functions 53-56 in the homepage 52 for transparent access are realized when a terminal unit 4 performs the program described with the Java programming language included in an HTML document.

[0032] Server list display / maintenance function 53 is equivalent to the list display function in this invention, and equivalent to the keyword inquiry function 54 and the retrieval demand function in this invention, retrieval result display / maintenance function 55 is equivalent to the retrieval result display function in this invention, and the multimedia viewer acquisition function 56 corresponds [function] to the program acquisition function for playback in this invention in it.

[0033] Retrieval server 3S are a server which has the function to create the server list made applicable to retrieval, to perform a search to the retrieval demand from a terminal unit 4, and to return a retrieval result to a terminal unit 4. Moreover, retrieval server 3S hold the homepage 52 for transparent access, and have the function downloaded to a terminal unit 4 according to the demand at the time of starting of a terminal unit 4.

[0034] The internet server section 61 in which retrieval server 3S perform the exchange with a terminal unit 4 and the multimedia servers 3A-3C using WWW, This internet

server section 61 is minded. A retrieval demand from a terminal unit 4 Reception, Based on this retrieval demand, retrieval of animation information was directed to the multimedia servers 3A-3C, the retrieval result from the multimedia servers 3A-3C was adjusted, and it has the retrieval section 62 distributed to a terminal unit 4. The internet server section 61 is realized by the software for performing informational management, distribution, etc. which are exhibited on the Internet using WWW. The retrieval section 62 will be realized by the software called the retrieval agent who performs retrieval processing autonomously and returns a retrieval result if the demand from a user is received.

[0035] The retrieval section 62 creates the server list 63 which is a list of the multimedia server made applicable to retrieval, i.e., multimedia servers with an accessible terminal unit 4, and also has the function distributed to a terminal unit 4 through the internet server section 61. The server list 63 is stored in hard disk drive units 15a and 15b. The retrieval section 62 adds the identifier to the server list 63, when a terminal unit 4 accesses retrieval server 3S, other multimedia servers which exist on a network 2 are looked for based on the server list 63 including the identifier of current and the multimedia server currently recognized and a new multimedia server is discovered. Grasp of the newest accessible multimedia server is thereby always attained.

[0036] Moreover, retrieval server 3S hold the homepage 52 for transparent access, and download the homepage 52 for transparent access to a terminal unit 4 through the internet server section 61 according to the demand at the time of starting of a terminal unit 4.

[0037] The multimedia servers 3A-3C are servers which have the function which retrieves the title information corresponding to animation information, downloads the multimedia viewer 57 to a terminal unit 4 if needed according to the function to return a retrieval result to retrieval server 3S, and the playback demand from a terminal unit 4, according to the demand of retrieval server 3S, and distributes animation information to a terminal unit 4.

[0038] The multimedia servers 3A-3C are equipped with the internet server section 64 which performs the exchange with retrieval server 3S and a terminal unit 4, the distribution section 65 which cooperates with the multimedia viewer 57 through this internet server section 64, and distributes animation information to a terminal unit 4, and the database engine section 66 which retrieves title information according to the retrieval demand from retrieval server 3S, and returns a retrieval result to retrieval server 3S, respectively. The internet server section 64, the distribution section 65, and the database engine section 66 are realized by software, respectively.

[0039] Moreover, the multimedia servers 3A-3C hold the multimedia viewer 57 required to reproduce the animation information 67 distributed to a terminal unit 4, the title information 68 corresponding to this animation information 67, and the animation information 67, respectively. The animation information 67 includes the information on the title corresponding to each contents in the title information 68 (it is described as titles 1 and 2 and --N by a diagram.) including the data of two or more contents (it is described as animations 1 and 2 and --N by a diagram.). The animation information 67, the title information 68, and the multimedia viewer 57 are stored in hard disk drive units 15a and 15b.

[0040] The database engine section 66 is realized by the database management system (DBMS; Database Management System) (Sybase (trademark of U.S. Sybase Inc)), for example, Sybase. The database engine section 66 retrieves the title information 68 using SQL (Structured Query Language; structured query language) according to the retrieval demand from the retrieval section 62 of retrieval server 3S. The title of the animation information applicable to retrieval conditions, the identifier of the multimedia server in which the animation information exists, The internet server section 64 is minded for the retrieval result containing URL (Uniform Resource Locator) which shows the file name of the animation information, and the access approach to the storage place and its storage place of the animation information. The retrieval section 62 of retrieval server 3S is answered.

[0041] The internet server section 64 distributes the multimedia viewer 57 to a terminal unit 4 according to the multimedia viewer acquisition demand using the multimedia viewer acquisition function 56 of the homepage 52 for transparent access from a terminal unit 4.

[0042] The multimedia viewer 57 is a program for animation playback corresponding to the contents type (for example, compression method of an animation) of the animation information 67, and has become the plug-in software of the Internet browser. When the accessed terminal unit 4 does not hold the multimedia viewer 57, a terminal unit 4 becomes reproducible [an animation] by downloading the multimedia viewer 57 to a terminal unit 4, without being dependent on the class of multimedia server.

[0043] Here, with reference to drawing 4 , the screen configuration of the homepage 52 for transparent access is explained. The homepage 52 for transparent access is distributed to the center section of the screen from a multimedia server, has the animation information playback section 71 for displaying the animation information reproduced by the multimedia viewer 57, and has the animation information control carbon button 72 for controlling playback and a halt of animation information to this

animation information playback section 71 down side. Moreover, the homepage 52 for transparent access It has the keyword input section 73 for inputting a keyword into the animation information playback section 71 bottom by the keyword inquiry function 54. On the right-hand side of the animation information playback section 71 by server list display / maintenance function 53 It has the server list display 74 for a terminal unit 4 to display the list of the identifiers of an accessible multimedia server, and has the retrieval result display 75 for displaying the retrieval result displayed on the left-hand side of the animation information playback section 71 by retrieval result display / maintenance function 55.

[0044] The identifier and icon of a multimedia server with an accessible terminal unit 4 are displayed on the server list display 74. At both the identifier and icon of a multimedia server, URL as a link information for accessing to the multimedia server is embedded. The title where URL of the animation information which was retrieved based on the keyword which the user inputted by the keyword input section 73, and was acquired was embedded is displayed on the retrieval result display 75.

[0045] Next, with reference to drawing 5 thru/or drawing 8 , actuation of the multimedia information distribution system 1 as an animation information distribution system concerning the gestalt of this operation is explained. The explanatory view, drawing 7 , and drawing 8 which show the sequence of processing [in / in the explanatory view in which drawing 5 shows transition of the screen display of the homepage for transparent access, and drawing 6 / a terminal unit 4 retrieval server 3S, and the multimedia servers 3A-3C] are the explanatory view showing serially the processing in a terminal unit 4, retrieval server 3S, and the multimedia servers 3A-3C. In addition, the following explanation serves as explanation of the animation information distribution approach concerning the gestalt of this operation.

[0046] In the multimedia information distribution system 1, first, a terminal unit 4 starts browser software (step S1), by the Internet browser section 51, specifies accessible retrieval server 3S, and connects them to retrieval server 3S (step S2). Retrieval server 3S distribute the homepage 52 for transparent access to a terminal unit 4 through the internet server section 61 (step S3). Next, a terminal unit 4 acquires the homepage 52 for transparent access distributed from retrieval server 3S, and as shown in drawing 5 (a), it displays it by the Internet browser section 51 (step S4).

[0047] On the other hand, retrieval server 3S search for the multimedia server which exists on a network 2 by the retrieval section 62 (step S5). The multimedia server which exists on a network 2 answers the retrieval section 62 of retrieval server 3S by using self identifier and icon of a multimedia server as retrieval result data (step S6).

Although the retrieval section 62 of retrieval server 3S adds the identifier and icon to the server list 63 and is in the server list 63 when a new multimedia server is discovered, the identifier and icon of a multimedia server which turned out for access to be impossible are deleted from the server list 63, update the server list 63, and transmit it to a terminal unit 4 (step S7). As a terminal unit 4 acquires the server list 63 (step S7), for example, showed it to drawing 5 (b) by server list display / maintenance function 53 of the homepage 52 for transparent access, the list of multimedia servers (Server Name and icon) is displayed on the server list display 74 (step S8). In drawing 5 (b), the server A currently displayed on the server list display 74, Server B, and Server C support the multimedia servers 3A, 3B, and 3C, respectively. In addition, URL of a server is embedded by both the Server Name and icons that are displayed at the server list display 74, and when a user chooses this Server Name and icon, a terminal unit 4 is accessed at the server of URL embedded at selected Server Name or an icon.

[0048] Next, in the homepage 52 for transparent access, a user inputs into the keyword input section 73 the keyword about the title of animation information which wants to search, as shown in drawing 5 (b). According to this, the keyword inquiry function 54 of the homepage 52 for transparent access is transmitted to retrieval server 3S by considering the inputted keyword as a retrieval demand (step S9). The retrieval section 62 of retrieval server 3S transmits a retrieval demand to each multimedia servers 3A, 3B, and 3C which exist in a server list, and directs retrieval of animation information (step S10). According to this retrieval demand, each multimedia servers 3A, 3B, and 3C retrieve the title information 68 by the database engine section 66, and answer the retrieval section 62 of retrieval server 3S, respectively in a retrieval result including the title of the animation information applicable to a retrieval demand, the identifier of the multimedia server in which that animation information exists, and the file name of animation information (step S11). The retrieval section 62 adjusts the retrieval result from each multimedia servers 3A, 3B, and 3C, and transmits to a terminal unit 4 as a criminal investigation result list (step S12). A terminal unit 4 acquires this retrieval result list, and by retrieval result display / maintenance function 55 of the homepage 52 for transparent access, as shown in drawing 5 (c), it displays the list of titles of the animation information which it is as a result of retrieval on the retrieval result display 75 of the homepage 52 for transparent access (step S13).

[0049] Next, a user chooses the title 76 of the animation information on desired from the lists of titles of the animation information currently displayed on the retrieval result display 75 (step S14). Directly, it connects with the multimedia server (at the example shown in drawing 6 , it is multimedia server 3C) in which the selected animation

information is accumulated based on URL currently embedded in the title of the selected animation information (step S15), and a terminal unit 4 transmits the file name of the selected animation information to it. The connected multimedia server transmits the type (for example, compression method of an animation) of animation information to a terminal unit 4 based on the file name of this animation information (step S16).

[0050] It checks whether the multimedia viewer corresponding to the type of the animation information which acquired the type of this animation information and was acquired by the multimedia viewer acquisition function 56 of the homepage 52 for transparent access has already downloaded the terminal unit 4 (step S17). When having not downloaded, by the multimedia viewer acquisition function 56, from the multimedia server which requires animation information, a terminal unit 4 transmits the multimedia viewer name corresponding to a type to the animation information, and requires download of a multimedia viewer (step S18). The multimedia server which received this demand transmits the multimedia viewer 57 to a terminal unit 4 (step S19). A terminal unit 4 downloads this multimedia viewer 57 by the multimedia viewer acquisition function 56. In addition, in a terminal unit 4, when the corresponding multimedia viewer has already downloaded, the multimedia viewer is reused and steps S17-S19 are not performed.

[0051] Next, a multimedia server distributes the animation information corresponding to the file name of the animation information transmitted from the terminal unit 4 (step S20). A terminal unit 4 reproduces the distributed animation information using the multimedia viewer 57 (step S20). As shown in drawing 5 (d), animation information is displayed on the dynamic-image playback section 71 of the homepage 52 for transparent access, and a user views and listens to this. Then, termination of distribution of the animation information from a multimedia server also ends playback of the animation information in a terminal unit 4 (step S21).

[0052] According to the animation information distribution system and the animation information distribution approach of starting the gestalt of this operation, as explained above According to access to retrieval server 3S from a terminal unit 4, a terminal unit 4 is received from retrieval server 3S. While the homepage 52 for transparent access is distributed and a user enables it to perform a retrieval demand of animation information using this homepage 52 for transparent access According to this retrieval demand, retrieval server 3S retrieve animation information on a network, distribute a retrieval result to a terminal unit 4, and a user uses this retrieval result. Since it enabled it to receive distribution of animation information from a multimedia server,

the retrieval and viewing and listening of animation information of a user are attained transparent, without being conscious of a whereabouts location, a class, etc. of multimedia server.

[0053] Moreover, actuation becomes easy, while the terminal unit which was required only for the number of the classes of multimedia server will require only one common terminal unit 4 and can reduce cost conventionally.

[0054] Moreover, from a terminal unit 4, it is not necessary to retrieve animation information according to an individual, it becomes possible to two or more multimedia servers to retrieve animation information which made applicable to retrieval once all the multimedia servers that can be accessed by retrieval, and actuation becomes easy.

[0055] Moreover, since the actuation in a terminal unit 4 becomes a thing using general browser software, it excels in versatility. Moreover, construction of the user interface in a terminal unit 4 becomes easy.

[0056] Moreover, since the terminal unit 4 created the list of accessible multimedia servers when retrieval server 3S were accessed from a terminal unit 4, grasp of the newest accessible multimedia server is attained, and while not resetting a terminal unit 4 and not taking time and effort to modification of the change in the multimedia server distributed etc. further, overlooking modification of a multimedia server is lost and it excels in expandability.

[0057] Moreover, in a terminal unit 4, while not installing the program (multimedia viewer) for viewing and listening to the animation information accumulated in two or more multimedia servers in advance and not taking time and effort, it can respond flexibly to modification of a program.

[0058] Moreover, a terminal unit 4 will become possible [receiving distribution of the animation information from all accessible multimedia servers], if at least one set of accessible retrieval server 3S is known.

[0059] In addition, although it explained that this invention was not limited to the gestalt of the above-mentioned implementation, for example, respectively separate hardware realized one retrieval server 3S and two or more multimedia servers 3A-3C with the gestalt of operation, the same hardware may realize one retrieval server and 1 multimedia server, it may unify, and the multimedia server containing a retrieval server may be prepared. In this case, the internet server section of a retrieval server and a multimedia server becomes common.

[0060] Moreover, in the multimedia server containing a retrieval server, when the retrieval demand (step S5) of a multimedia server is received from other retrieval servers, it searches also from the multimedia server further, and it also becomes

possible to answer a letter in a retrieval result to the retrieval server which emitted the retrieval demand. therefore, when two or more multimedia servers containing a retrieval server exist The retrieval server accessed first emits a retrieval demand to the multimedia server which the retrieval server already knows. The multimedia server which received the retrieval demand emits a sequential retrieval demand to the multimedia server which self knows further. Creation of a perfect server list is attained by making a retrieval result the multimedia server which received the retrieval demand answer a letter to the server which emitted the retrieval demand, respectively.

[0061] In addition, when the retrieval server which a terminal unit 4 accesses first when two or more retrieval servers exist is decided, the retrieval server accessed first needs to hold the homepage for transparent access.

[0062]

[Effect of the Invention] As explained above, according to claim 1 thru/or an animation information distribution system given in four or claim 5 thru/or the animation information distribution approach given in eight Use World Wide Web and it responds to access from a client through a network. Distribute the information for animation information access to a client, and a retrieval demand of the animation information from a client is accepted. Retrieve animation information on a network and a retrieval result including the link information to animation information is distributed to a client. Moreover, since it was made to distribute animation information according to access from the client using the link information included in a retrieval result The effectiveness of retrieving easily the animation information accumulated in two or more animation information distribution origin with one terminal unit, or becoming possible to receive distribution is done so.

[0063] Moreover, since according to the animation information distribution system according to claim 2 or 3 or the animation information distribution approach according to claim 6 or 7 it searches for the animation information distribution origin on a network and the list of animation information distribution origin was created, the effectiveness that grasp of the accessible newest animation information distribution origin is still attained is done so.

[0064] Moreover, according to an animation information distribution system according to claim 4 or the animation information distribution approach according to claim 8, since it enabled it to distribute a program required for playback of animation information to a terminal unit if needed, with a terminal unit, the effectiveness of it becoming unnecessary to hold a program required for playback of animation information in advance is done so.

【図3】本発明の一実施の形態に係る動画情報配信システムの概略の構成を示す説明図である。

【図4】本発明の一実施の形態における透過的アクセス用ホームページの画面の構成を説明するための説明図である。

【図5】本発明の一実施の形態に係る動画情報配信システムの動作時における透過的アクセス用ホームページの画面遷移を説明するための説明図である。

【図6】本発明の一実施の形態に係る動画情報配信システムにおける処理の順番を説明するための説明図である。

【図7】本発明の一実施の形態に係る動画情報配信システムにおける処理の流れを説明するための説明図である。

【図8】本発明の一実施の形態に係る動画情報配信システムにおける処理の流れを説明するための説明図である。

【図9】従来のマルチメディア情報配信システムの構成の一例を示す説明図である。

【符号の説明】

1…マルチメディア情報配信システム、2…ネットワーク、3S…検索サーバ、3A、3B、3C…マルチメディアサーバ、4…端末装置、51…インターネットブラウザ部、57…透過的アクセス用ホームページ、61…インターネットサーバ部、62…検索部、64…インターネットサーバ部、65…配信部、66…データベースエンジン部

図1 Fig 1

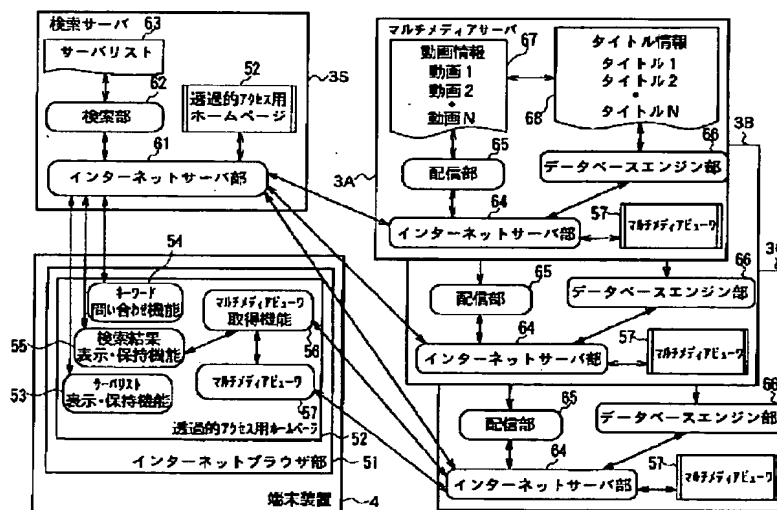


図3 Fig 3

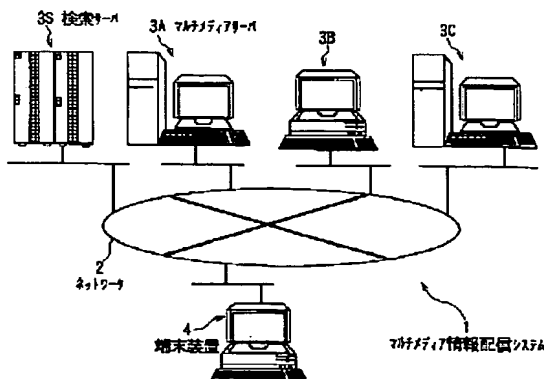
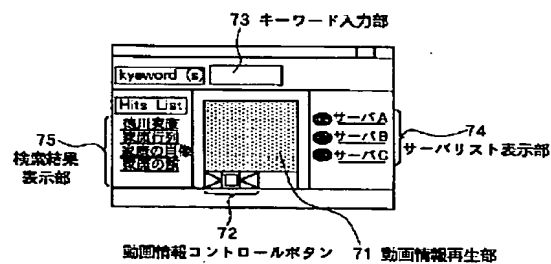


図4 Fig 4



THIS PAGE BLANK (USPTO)

図2 Fig 2

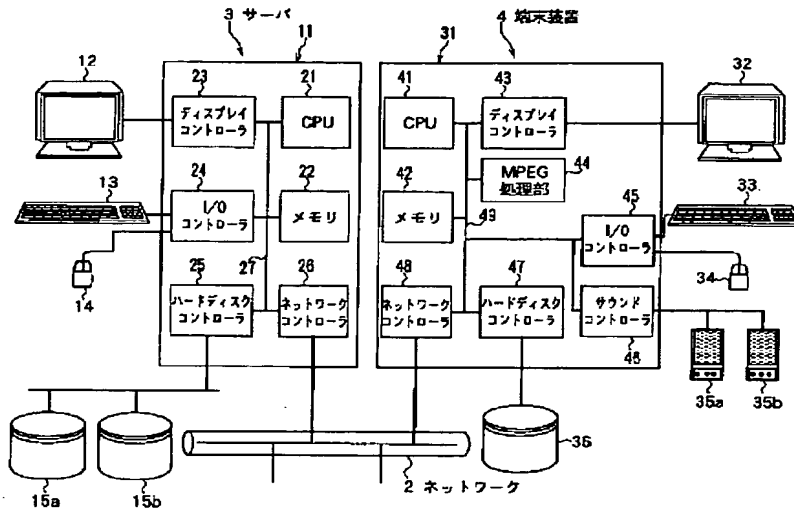


図5 Fig 5

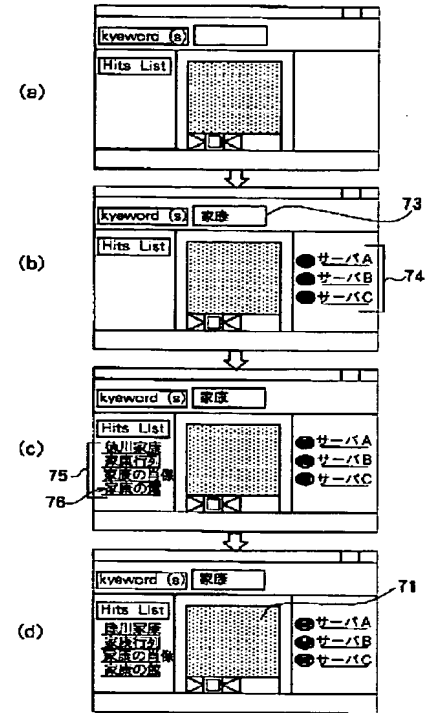


図6 Fig 6

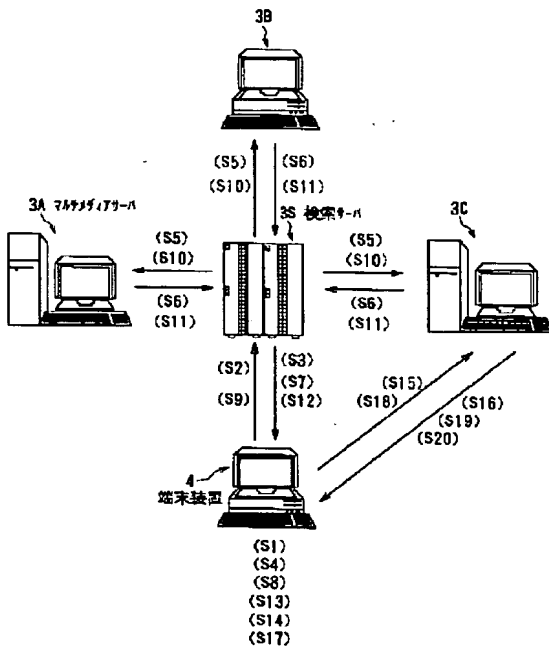
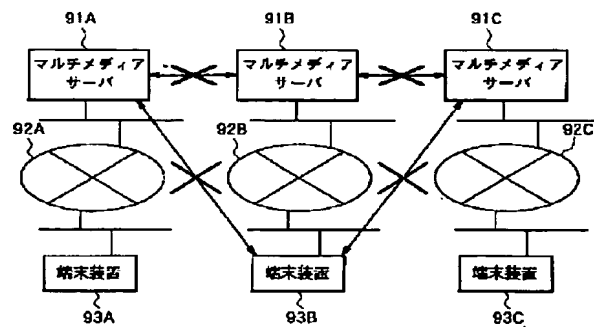


図9 Fig 9



THIS PAGE BLANK (USPTO)

図 7 Fig 7

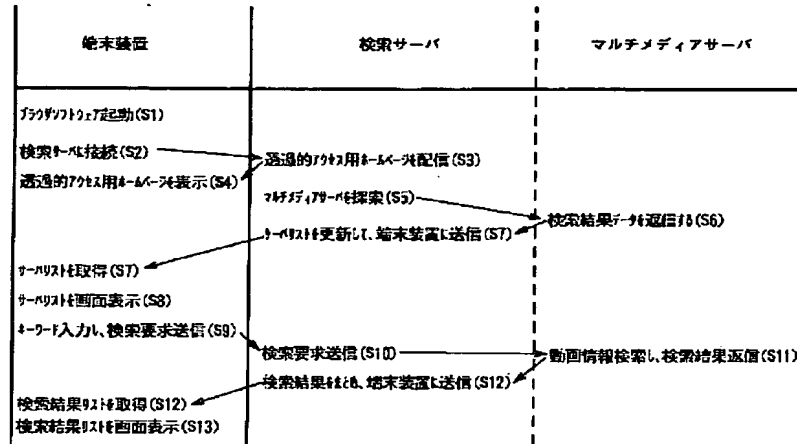
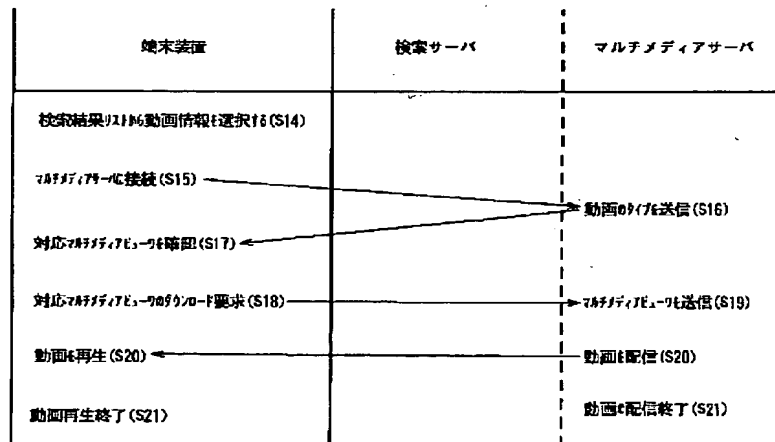


図 8 Fig 8



フロントページの続き

(51) Int. Cl. ⁶

識別記号

F I

H 0 4 N 7/173

THIS PAGE BLANK (USPTO)